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FEE RECORD SHEET

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PREPARATION AND TRANSFER SHEET
BACKGROUND OF THE INVENTION

The cutting surfaces available for example, in a typical household kitchen, have known deficiencies, all of which limit their usefulness in food preparation. Plastic and wood kitchen counter tops may be marred by preparing food on their surfaces. Ceramic counter top surfaces may dull the knife or other utensil being utilized. Many surfaces utilized in a kitchen have sufficient porosity so as to harbor bacteria. These include wooden cutting boards and certain of the rigid plastic transportable boards. A documented concern over the transport of bacteria, such as salmonella bacteria commonly found on chicken to other food subsequently processed on the cutting surface, has lead to recommendations ranging from disinfecting the surfaces to preparing the chicken only after other food has been prepared. The concern over bacterial contamination is especially difficult to resolve with fixed cutting surfaces, such as counter tops and chopping blocks. Even those portable cutting surfaces are not easily sterilized, and may not withstand the heat of dish washing. A requirement for sterilizing after use leads to the requirement of multiple portable devices for the preparation of a single meal.

After food is prepared by conventional techniques, it must be handled again to move it from the cutting surface to the container.

Various previous devices have been proposed to resolve the known deficiencies of cutting surfaces. These include cutting surfaces which are protected by disposable tear-off

5 sheets, including thin plastic sheets that may be placed over conventional surfaces. However, known tear-off or cover sheets have not had sufficient strength to avoid perforation during food preparation, or to act as an effective transport for transferring the food after preparation to another container.

10 Hinged cutting surfaces, which may be flexed in order to provide a funneling effect for the transfer of prepared food articles to a container have been proposed. However, such devices are not easily cleaned because of the crevices formed by the hinging effect, are expensive and are limited to the formation of a crude trough, and will not conform to the shape of the container to which the food is to be transferred. Further, such prior products, when sufficiently thin to be
15 flexed for transfer, do not have sufficient strength to resist perforation and for supporting the food articles when cantilevered from one end. Such known prior cutting surfaces may be formed from roll stock, which results in the finished product having a bias toward reassuming a curved
20 configuration, which makes it difficult to maintain the sheet material in contact with the supporting surface as food articles are loaded onto the surface and during preparation.

Those articles having sufficient rigidity are often opaque or translucent, making it difficult to identify and
25 confirm the cleanliness of the articles.

It is therefore desirable to have a flexible article handling sheet which lies flat on a supporting surface, and resists perforation during normal household cutting and chopping operations. Such an article is particularly
30 desirable where it has sufficient cantilever beam strength to

lift and transport a substantial quantity of prepared food articles from a sheet to a suitable container of varying shape.

SUMMARY OF THE INVENTION

5 In an exemplary embodiment of the invention, the deficiencies of the prior art devices are resolved by extruding a sheet amorphous polypropylene co-polymer and cutting the sheet to a size suitable for food preparation or other article handling. The advantages of the invention are particularly realized in a generally rectangular sheet greater
10 than 10 inches in one dimension and six inches in the second dimension. Such a material is sufficiently hard to resist perforation and spalling, but has no substantial dulling effect upon most knives or other kitchen implements. In the
15 exemplary embodiment, the thickness of the sheet is approximately 0.010 inches, which results in a sheet that may be easily bent around its longitudinal centerline and held at one end by the user. The sheet has sufficient cantilever beam strength to support a substantial amount of food, or other
20 articles, at the end of the sheet opposite the held end. When placed over the edge of a container, the sheet conforms to provide a substantial line of support. For example, when placed over the edge of a round bowl, the sheet will contact the upper edge of the round bowl over a substantial part of
25 the circumference of the bowl, allowing the user to incline the sheet and to cause the food articles to slide under the influence of gravity into the container.

The extruded material lies flat and has a surface finish such as to be substantially transparent. Recipes or other
30 materials are clearly visible and readable through the cutting

surface of the sheet. The transparency and finish of the material results in a surface that does not retain food material after cleaning and the material selected will tolerate cleaning in a dishwasher with temperatures in excess of 180 degrees F.

These and other advantages of the invention will be more particularly realized by a reading of the following detailed description of the invention together with the drawings in which like reference numerals refer to like parts throughout and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of the cutting sheet showing its use in transferring prepared food materials to a suitable container.

Fig. 2 is a perspective view of the cutting sheet showing its use in cutting food articles.

Fig. 3 is a plan view of the cutting sheet.

Fig. 4 is an enlarged cross-sectional view taken on line 4-4 of Fig. 3 showing the partial penetration of the thickness of the sheet by a cutting implement.

DETAILED DESCRIPTION OF THE DRAWINGS

The sheet 10 is shown to be a generally rectangular planar sheet having width-wise edges 12 and 14 corresponding to a first dimension of the sheet and lengthwise edges 16 and 18 corresponding to the lengthwise or cantilever access of the sheet. In the preferred embodiment, the sheet is extruded flat with a width corresponding to the edges 12 and 14. However, it should be understood that the first dimension in other embodiments can be the lengthwise or cantilever dimension corresponding to the edges 16 or 18. When extruded

-5-

with the width corresponding to the edges 12 and 14, the product is cut to length, and to create rounded corners 20. Extrusion produces a sheet which is smooth on both sides and which therefore may be reused by turning the product over to obtain a new and sanitary surface on which to work prior to cleansing. The density of the polypropylene is selected to result in a Rockwell hardness in excess of K72. Surface hardnesses of K72 or less result in excessive spalling and perforations by cutting implements, and are prone to discoloration referred to as blushing. Products with excessive deformation have a very short useful lifetime and may have to be disposed of after each use. On products which are reused, it is difficult to determine if all of the food materials and bacteria have been removed because the heavily marked surface may not reveal what residual material may have been retained, even after washing.

Material having a Rockwell hardness up to 90 is suitable for the intended purpose without being sufficiently hard so as to dull knives and other cutting implements or sufficiently brittle to prevent adequate flexion for transfer of food.

It has been found that amorphous polypropylene co-polymer (alternatively known as i-propene, polymer with ethene) with the following properties has the requisite clarity, toughness and chemical solvent and stress-cracking resistance:

- a softening point in excess of 126 degrees C.;
- a Rockwell hardness of 80 as determined by the ASTM Test Method D785;
- a melt-flow rate of 1.0 degrees Centigrade per minutes as determined by the ASTM Test Method 1238;

a density of .900gm/CM³ as determined by the ASTM Test Method 1505.

a tensile modulus of 150,000 psi as determined by ASTM Test Method D638; and

5 a flexural modulus of 145,000 psi as determined by the ASTM Test Method 790.

Fig. 4 shows the penetration into the upper surface 22 of a knife blade 24. In order to prevent perforation during normal use of sharp implements through the lower surface 26,
10 it is necessary to provide material of the type described with a thickness in the range of 0.008 inches to 0.030 inches. Although sheet thicknesses in excess of 0.030 inches would not be perforated by cutting, they cannot be flexed to transfer the food as hereinafter described.

15 Fig. 2 shows the use of the sheet 10 on a counter top 28, a knife 30 with blade 24 is being utilized to slice a food article 32 (celery in this instance) into suitable size pieces 34. After all of the food articles have been cut to the appropriate size, they are transferred to an appropriate
20 container in the manner hereinafter described. However, for purposes of illustration, it is assumed that vegetables or other food articles being shown in Fig. 2 were prepared after chicken or other food articles had previously been prepared on the opposing surface 26. Fig. 1 shows the sheet 10 which has
25 been flexed by being grasped by the user adjacent one end. A large piece of prepared chicken 36 is positioned with its center of mass closely proximate to the opposite end. As illustrated, the sheet has a width of approximately 11 inches and a length of approximately 15 inches. Therefore, the
30 weight of the chicken or other food article 36 is supported on

a cantilever beam support formed by the flexion of the sheet. Weights in excess of five ounces can be supported in this manner at distances of 12 to 14 inches from the held end. Food articles so supported can be transported substantial distances (for example across the room) to a suitable container such as the bowl 38. When the sheet 10 is rested on the upper edge 40 of bowl 38, it has sufficient flexibility to product a substantial line of contact around the circumference of the bowl. This additional support allows the user to raise the held end of the sheet sufficient distance to cause the food articles to slide off of the sheet and into the bowl under the influence of gravity. Transfer of the material is facilitated by the finish of the material produced by the extrusion process.

15 Having described my invention, I now claim:
I CLAIM:

-8-

CLAIMS

1. A flexible article handling sheet comprising:
 - 2 a sheet of thin flexible resilient plastic material
 - 4 having sufficient cantilever beam strength when flexed around
 - 6 the longitudinal centerline and held proximate a first end to
 - support an article spaced at least 10 inches from and weighing
 - at least 5oz.;
 - said plastic material having a Rockwell hardness in
 - excess of 72.
2. The sheet of claim 1, wherein:
 - 2 said plastic material is comprised of amorphous
 - polypropylene co-polymer.
3. The sheet of claim 1, wherein:
 - 2 said plastic material is in excess of .008" in
 - thickness and less than .030" in thickness and less than
 - 4 .030".
4. The sheet of claim 1, wherein:
 - 2 said plastic material is transparent.
5. The sheet of claim 1, wherein:
 - 2 said material having a Rockwell hardness in the
 - range of 75-90.
6. A method of making a flexible article handling sheet
- 2 comprising:
 - extruding amorphous polypropylene co-polymer into
 - 4 flat extruded stock having a width equal to or greater than a
 - first dimension of the finished sheet;
 - 6 said sheet having a thickness in the range of .78"
 - to .030";

8 cutting said extruded stock into finished sheets
having a length equal to a second dimension, transverse to
10 said first dimension of the finished sheet.

7. The method of claim 6, wherein:

2 said amorphous polypropylene has a flexural modulus
in the range of 75,000 to 200,000 psi.

8. The method of claim 6, wherein:

2 said amorphous polypropylene has a Rockwell hardness
in the range of 75-90.

9. A flexible cutting sheet for food preparation,
2 comprising:

4 a sheet of plastic sheet material having a thickness
of less than .030" and a flexural modulus in the range of
75,000 to 200,000 psi;

6 said sheet having a Rockwell hardness in excess of
72.

10. A flexible cutting sheet for food preparation
2 according to claim 9, wherein:

4 said sheet having a first dimension in excess of 6
inches and a second dimension, transverse to said first
dimension, in excess of 10 inches.

11. A flexible cutting sheet for food preparation
2 according to claim 10, wherein:

4 said sheet having a Rockwell hardness in the range
of 75-90.

-10-

ABSTRACT

A thin polypropylene sheet is extruded flat, with a thickness in the range of .008 to .030 inches with a Rockwell hardness in excess of 72 and a flexural modulus in excess of 55,000 psi. The resultant surface may be utilized for cutting and chopping foods. A sharp knife will penetrate, but not perforate, the sheet material to not dull the knife while maintaining the integrity of the surface. When flexed around its longitudinal centerline, the sheet material develops substantial cantilever beam strength, so as to transport food articles after preparation into an appropriate container.

COMBINED DECLARATION/POWER OF ATTORNEY

Attorney's Docket No. 5333 PA01

AS BELOW NAMED INVENTOR, I HEREBY DECLARE THAT: This Declaration is of the following type:

- ☒ Original ☐ Supplemental ☐ Continuation-in-Part ☐ Divisional
☐ Continuation ☐ National Stage of PCT

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: PREPARATION AND TRANSFER SHEET the specification of which:

- ☒ is attached hereto
☐ was filed on _____ as Serial No. _____
☐ was amended on _____ (if applicable)
☐ was described and claimed in PCT International Application No. _____ filed on _____ and as amended under PCT Article 19 on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Sec. 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Sec. 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

			Priority Claimed	
(Country)	(Appn. No.)	(Day/Month/Year Filed)	(Yes)	(No)
_____	_____	_____	_____	_____
(Country)	(Appn. No.)	(Day/Month/Year Filed)	(Yes)	(No)
_____	_____	_____	_____	_____

I hereby claim the benefit under Title 35 USC 120 of the United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35 USC 112, I acknowledge the duty to disclose material information as defined in Title 37 CFR 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Serial No.)	(Filing Date)	(Issue)
_____	_____	_____
(Serial No.)	(Filing Date)	(Issue)
_____	_____	_____

I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith: Carl R. Brown, Reg. No. 18,587; Neil F. Martin, Reg. No. 23,088; John L. Haller, Reg. No. 27,795; James W. McClain, Reg. No. 24,538.

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at (619) 238-0999 (facsimile: (619) 238-0062) and address all correspondence to Brown, Martin, Haller & McClain, 110 W. C. Street, 13th Floor, San Diego, California, 92101.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued therefrom.

FULL NAME OF SOLE OR FIRST INVENTOR		INVENTOR'S SIGNATURE	DATE
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FULL NAME OF SECOND JOINT INVENTOR IF ANY		INVENTOR'S SIGNATURE	DATE
RESIDENCE		CITY/STATE	
FIRST OFFICE ADDRESS			

Attorney
Docket No. 5355 PA01

A circular postmark from the 'MAIL ROOM' dated 'DEC 22 1992'. The text 'MAIL ROOM' is curved along the top inner edge, and 'DEC 22 1992' is in the center. The words 'FEDERAL BUREAU OF INVESTIGATION' are partially visible along the bottom inner edge.

Y UNDER THAT I AM

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 15 CFR 121.12, and reproduced in 37 CFR 1.91(d), for purposes of paying reduced fees to the U.S. Patent and Trademark Office. I declare that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern, and the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

PREPARATION AND TRANSFER SHEET

ON THIS DATE

flow

1 4410294 1 30 1

ISSUED

FULL NAME

ADDRESS

INDIVIDUAL

SMALL BUSINESS CONCERN

() NONPROFIT ORGANIZATION.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information furnished are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING RODERICK THOMPSON
TITLE OF PERSON IF OTHER THAN OWNER PRESIDENT
ADDRESS OF PERSON SIGNING 625 South Sier-a, Unit 46, Solana Beach, CA 92075
SIGNATURE Y2 Perce C. H. L. DATE December 21, 1992

Herbert Abramson, Hutter & McLean, San Diego, California

IBM (xxxxxx) FORMS (xxx)

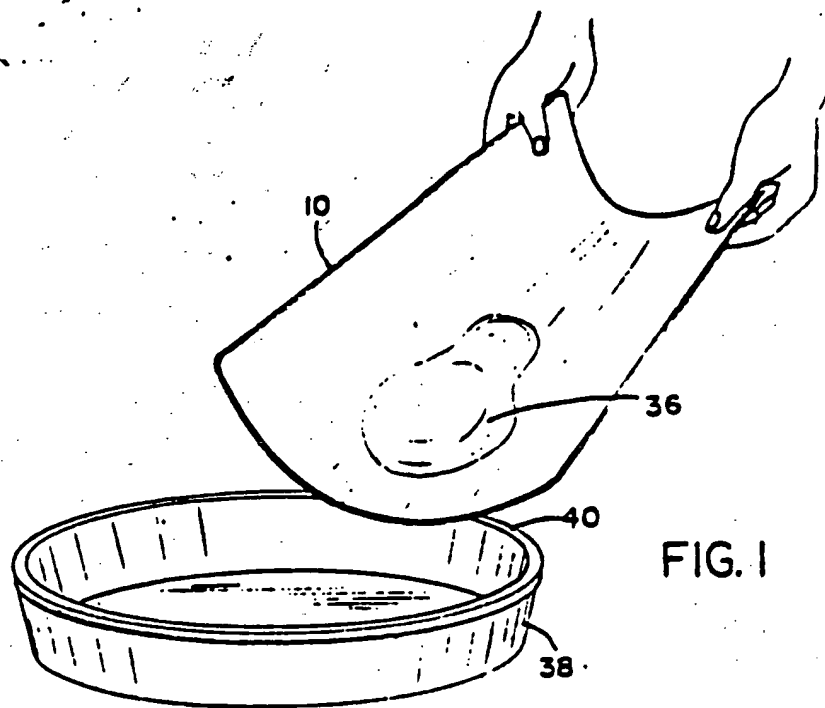


FIG. 1

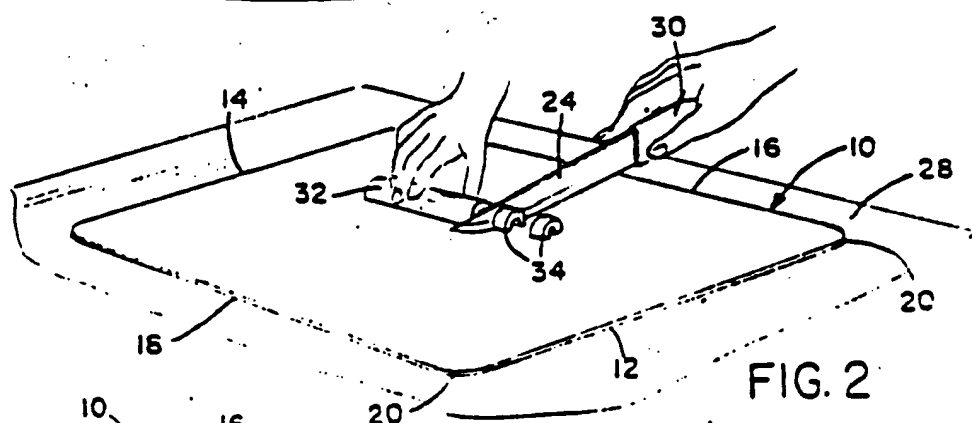


FIG. 2

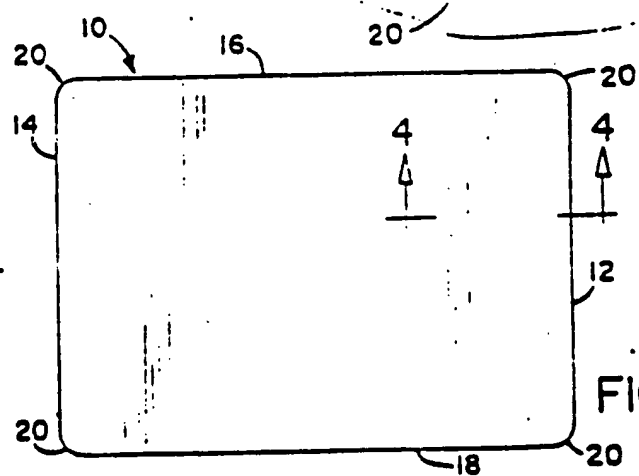


FIG. 3

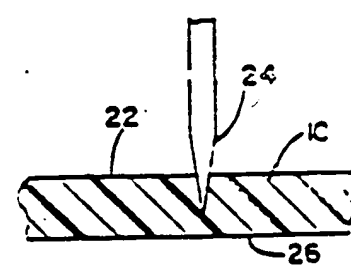


FIG. 4